

Q&A for Tech Talk Topic: Z-Wave Smart Home Solutions

Q: I could not find the recordings for previous Tech Talk.

A: All of the previous Tech Talk presentations and videos are available at <https://www.silabs.com/support/training>

Q: What is the device-to-device range of Z-Wave?

A: As with any question about range, it's difficult to answer because there are so many unique factors to consider in each situation. Z-Wave is built on sub-GHz frequency bands, so all things equal will typically have better range than 2.4GHz protocols. The new 700 Series can extend a smart home network to the edge of the yard, with line-of-sight range of 100-200 meters.

Q: With Z-Wave seemingly being left out of the new Connected Home Over IP initiative, why should my company choose to put Z-Wave into our new smart home products?

A: Z-Wave is already one of the largest installed ecosystems for the smart home, and still growing. With the Z-Wave protocol moving to an open standard, removing the concerns about single-source, we expect even wider adoption.

Q: What are TX power restrictions?

A: Z-Wave is limited to +13dBm.

Q: Is S2 device security compatible with older devices?

A: Yes, S2 is fully backward compatible. The device and controller will use the highest common security scheme. Non-S2 devices can join S2 networks and vice-versa.

Q: What is the battery life time for Z-Wave sensors?

A: With the new 700 Series, battery life up to 10 years is possible.

Q: Can two Z-Wave light switch devices communicate without a hub?

A: The devices must be put into a network first before they can communicate with each other. After they are included into a network, they are capable of communicating to each other, but the initial network setup has to be done by a controller.

Q: Do I still need to base my controller on ZIP?

A: For the 700 series, Z/IP is required for a controller.

Q: What is the typical cost for certification?

A: You can see an explanation of the certification process here: <https://www.silabs.com/products/wireless/mesh-networking/z-wave/certification> and the full fee schedule here: <https://www.silabs.com/documents/login/miscellaneous/INS12578-9.pdf>

Q: Do all of the products need to work with all of the third party hubs (for instance does the Ring kit work with Smart things or Vera?)

A: Z-Wave end device certification means that for this particular device type, all capabilities have been validated. This means that it will work with any controller. It is up to the controller to provide feature support according to the controller certification requirements. Some vendors might implement the manufacturer specific command class to provide preferred treatment for their own devices.

Q: Is there a Z-Wave spec for Europe (different frequency band for sub-GHz)?

A: Yes, correct. Z-Wave uses 868MHz in Europe (and 915MHz in N. America).

Q: Is Anaren AIR Z-Wave configurable?

A: While it shares the same ISM frequency band, Anaren AIR uses a proprietary protocol for communication that is not compatible with Z-Wave.

Q: What is the throughput of Z-Wave? Does it work for security cameras?

A: Z-Wave supports 9.6, 40 and 100 kbps. It is not likely enough bandwidth for video.

Q: What about the older modules? Is there any UART protocol documentation available by now? (as opposed to the opened-up higher-level documentation on device classes etc.)

A: In the 500 series hardware we have SerialAPI applications for end devices and controllers that allow you to control everything through UART. You will have to meet the requirements for certification in order to go into production though, so you will need to address the device class of your device and its associated requirements.

Q: What is the association with Z-wave and Samsung's SmartThings?

A: Samsung SmartThings is one of the larger platforms in Z-Wave's ecosystem.

Q: Is Z-Wave only good for sensors?

A: Z-Wave encompasses a large variety of applications for security systems, smart home and others. You can find a comprehensive list here: <https://products.z-wavealliance.org/>

Q: If certification guarantees interoperability, why is there a need for a new open standard?

A: Even with an open standard there will still be a need for interoperability certification, which will continue to be managed by the Z-Wave Alliance.

Q: With industry working to have a common IoT standard (CHIP) why fragment the IoT market?

A: Z-Wave has been around for 15+ years and the Connected Home over IP project has just been started. There is definitely motivation to move to a unified application layer, but it's too early to tell how this will all play out. In the meantime the Z-Wave application layer is well defined and time tested.

Q: Z-Wave vs. Zigbee sub-GHz, what is your view?

A: Zigbee does not currently define a sub-GHz PHY (with the specialized exception for the UK smart metering).

Q: How low frequency will Z-Wave continue to operate effectively?

A: The radio operates at either 915MHz or 868MHz depending on what country you're in. The same hardware can be designed to work in any region but with different software.

Q: Can you repeat the discount code for the Works With conference?

A: The early bird registration code is WWSH. You can register here: <https://workswith.silabs.com/>

Q: Since it is proprietary ICs, is there a number of years that Silabs will commit in writing to support the product?

A: Yes. You can find our longevity commitment here: <https://www.silabs.com/wireless/longevity-commitment>

Q: Could Z-Wave work on tough hardware tools, heavy equipment sensors, medical equipment, and fitness/healthcare equipment?

A: We have customers who use Z-Wave in outdoor jobsite applications today. Even though the primary market is smart home, there is nothing that prevents Z-Wave from working in these applications. We expect to see even more expansion into new markets as Z-Wave moves to an open standard.

Q: How often does the device come up to check for traffic?

A: There are two types of devices; sleepy devices which can have battery life of 5-10 years, and might wake up two or three times/day, and FLiRS, or Frequently Listening Routing Slaves. These devices partially wake up one to four times per second to see if there is any needed communication and either go back to sleep or move to a fully awake state to respond to traffic. FLiRS allows devices which need low latency responsiveness to still operate on batteries (such as door locks). For more about FLiRS see: <https://www.silabs.com/documents/login/white-papers/Z-Wave-FLiRS.pdf>

Q: Two part question - Does the SDK run on a popular OS? What language is the software written in?

A: The 700 series SDK runs on Windows, MacOS, and Linux. The code is written in C++. Some of the dev tools only run on windows so those specific tools will require VMs.

Q: What is the future of Z-Wave within the Silicon Labs protocols portfolio? It seems Z-Wave stands as independent product at the moment.

A: The Z-Wave SDK is now integrated into Simplicity Studio along with the other SDKs for Bluetooth, Zigbee, Thread and others. We believe that Z-Wave is an important part of the Silicon Labs portfolio and continue to invest in its future success.

Q: Are you going to continue the existing sub-GHz chips like EFR32MG1x in future?

A: Yes, absolutely. There are still a lot of proprietary sub-GHz protocols used today and our Mighty Gecko and Flex Gecko families will continue to offer solutions for these.

Q: Is there a simple USB Z-Wave on/off switch?

A: You can find a list of every Z-Wave certified product listed on the Z-Wave website here: <https://products.z-wavealliance.org/>

Q: If the standard is "open," why do manufacturers need to join the Z-Wave Alliance and pay it fees?

A: The Z-Wave Alliance, like many other industry alliances, exists to ensure interoperability between vendors, promote the standard for its members, and nurture continued innovation. The fees collected are used to fund the Alliance activities.

Q: Where can I find out more on the Z-Wave API?

A: The easiest way is to download Simplicity Studio (<https://www.silabs.com/products/development-tools/software/simplicity-studio>). The Z-Wave SDK is integrated into Simplicity Studio, and includes all of the Z-Wave documentation. This also gives you access to all of the sample applications.

Q: Can the Z-wave devices in the same network send their messages at the same time?

A: Yes, Z-Wave devices use a listen-before-talk technique to minimize over-the-air collisions and when they occur, uses a random back-off interval.

Q: SiLabs has both Zigbee and Z-Wave . Same team of FAEs & Sales is selling both. When are they supposed to propose and push Z-Wave and when they are better to push ZigBee?

A: We don't advocate one over the other, but instead try to educate customers to understand the benefits and trade-offs so that they can make the best informed decision appropriate to their needs.

Q: Are there any technical webinars/workshop coming up soon?

A: We have more Tech Talks coming every Tuesday and Thursday. You can find the schedule here:

<https://www.silabs.com/about-us/events>

We also have hands-on virtual workshops for our BG22 product in May:

<https://www.silabs.com/about-us/events/virtual-bluetooth-workshop>